Fig.1.

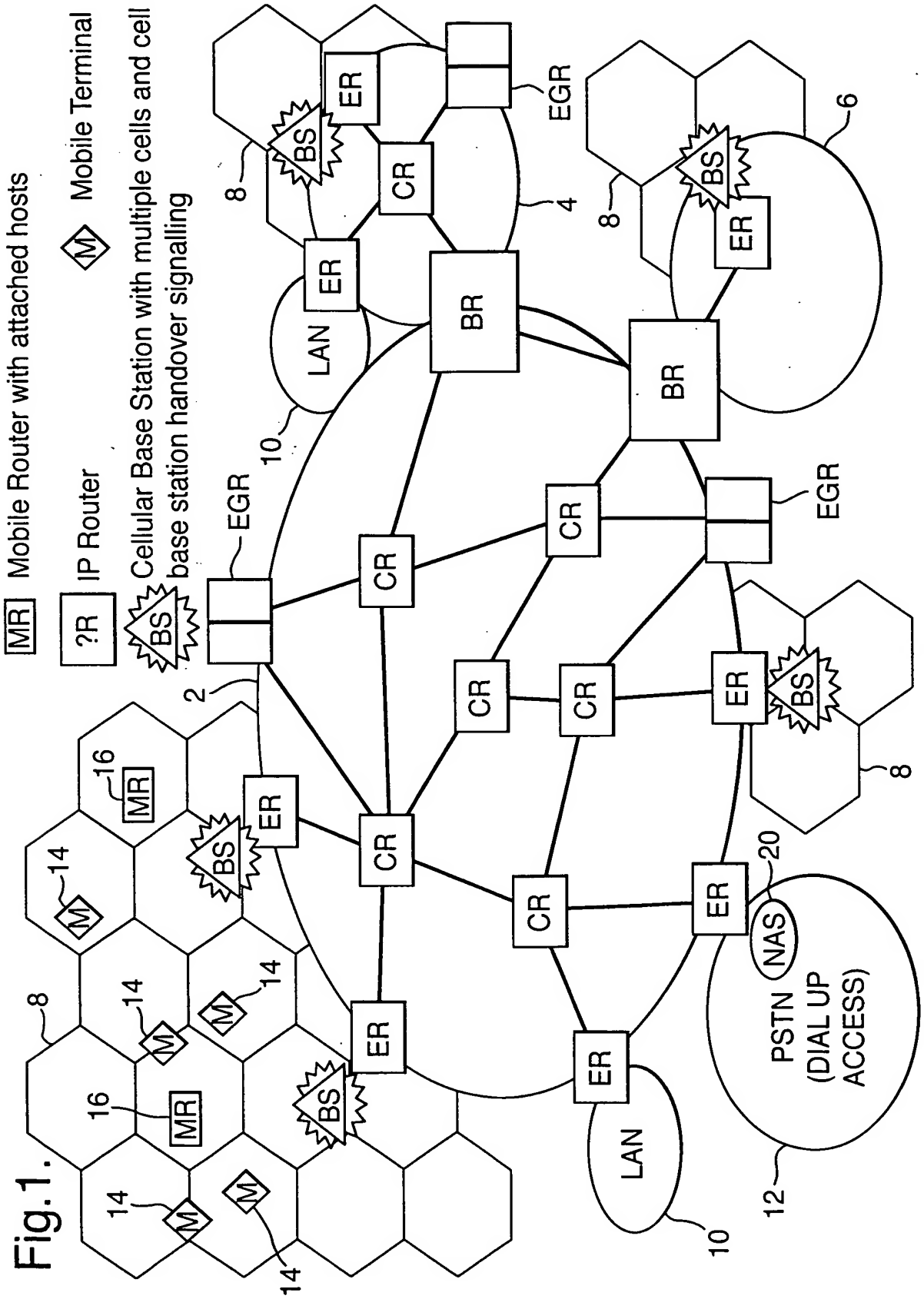

MR Mobile Router with attached hosts
?R IP Router
M Mobile Terminal
BS Cellular Base Station with multiple cells and cell / base station handover signalling
MR
?R
BS
ER
CR
BR
EGR
LAN
PSTN (DIAL UP ACCESS)
NAS
2
4
6
8
10
12
14
16
20

Fig.2.

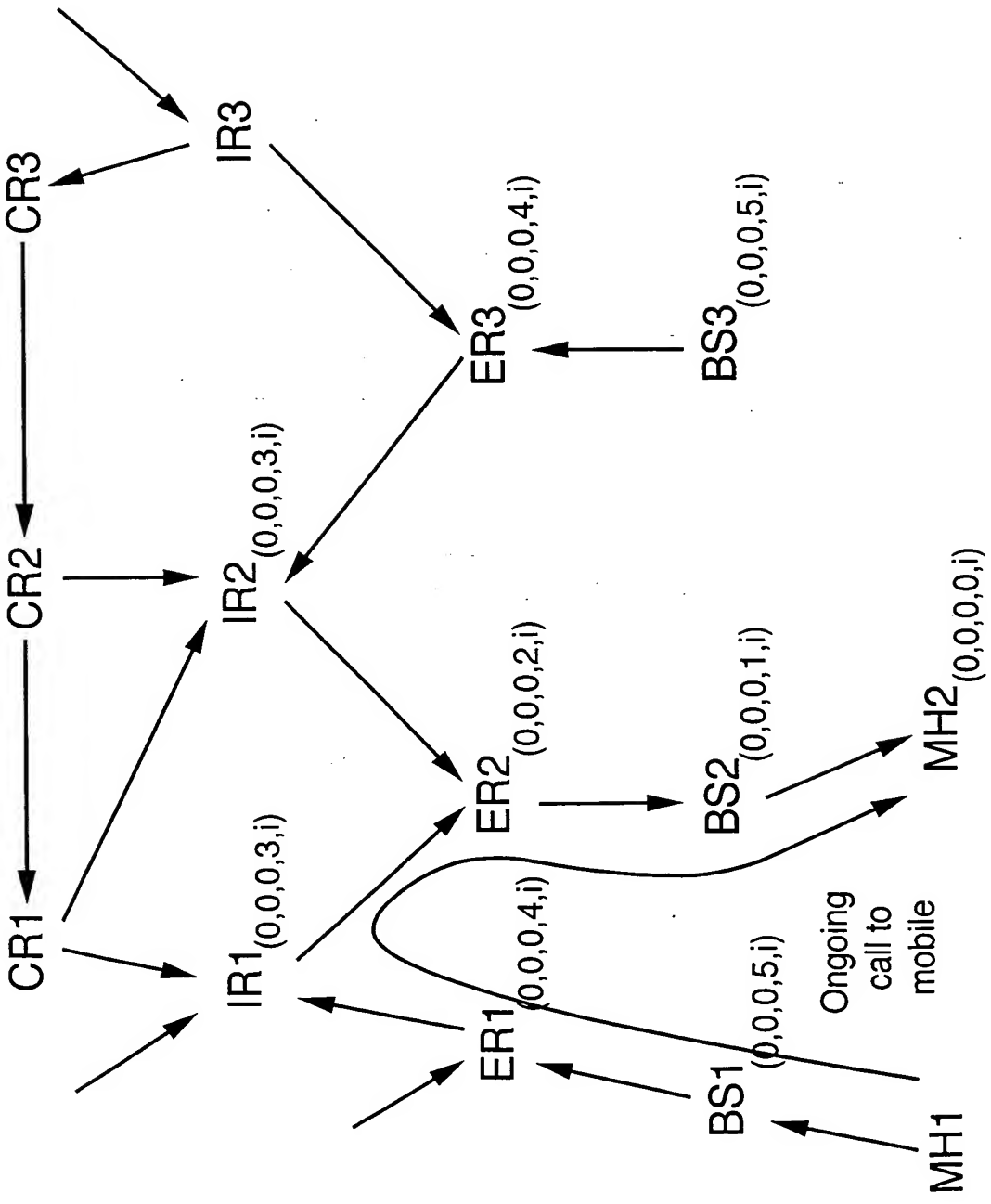

CR1
CR2
CR3
IR1(0,0,0,3,i)
IR2(0,0,0,3,i)
IR3
ER1(0,0,0,4,i)
ER2(0,0,0,2,i)
ER3(0,0,0,4,i)
BS1(0,0,0,5,i)
BS2(0,0,0,1,i)
BS3(0,0,0,5,i)
MH1
MH2(0,0,0,0,i)
Ongoing call to mobile

Fig.3.

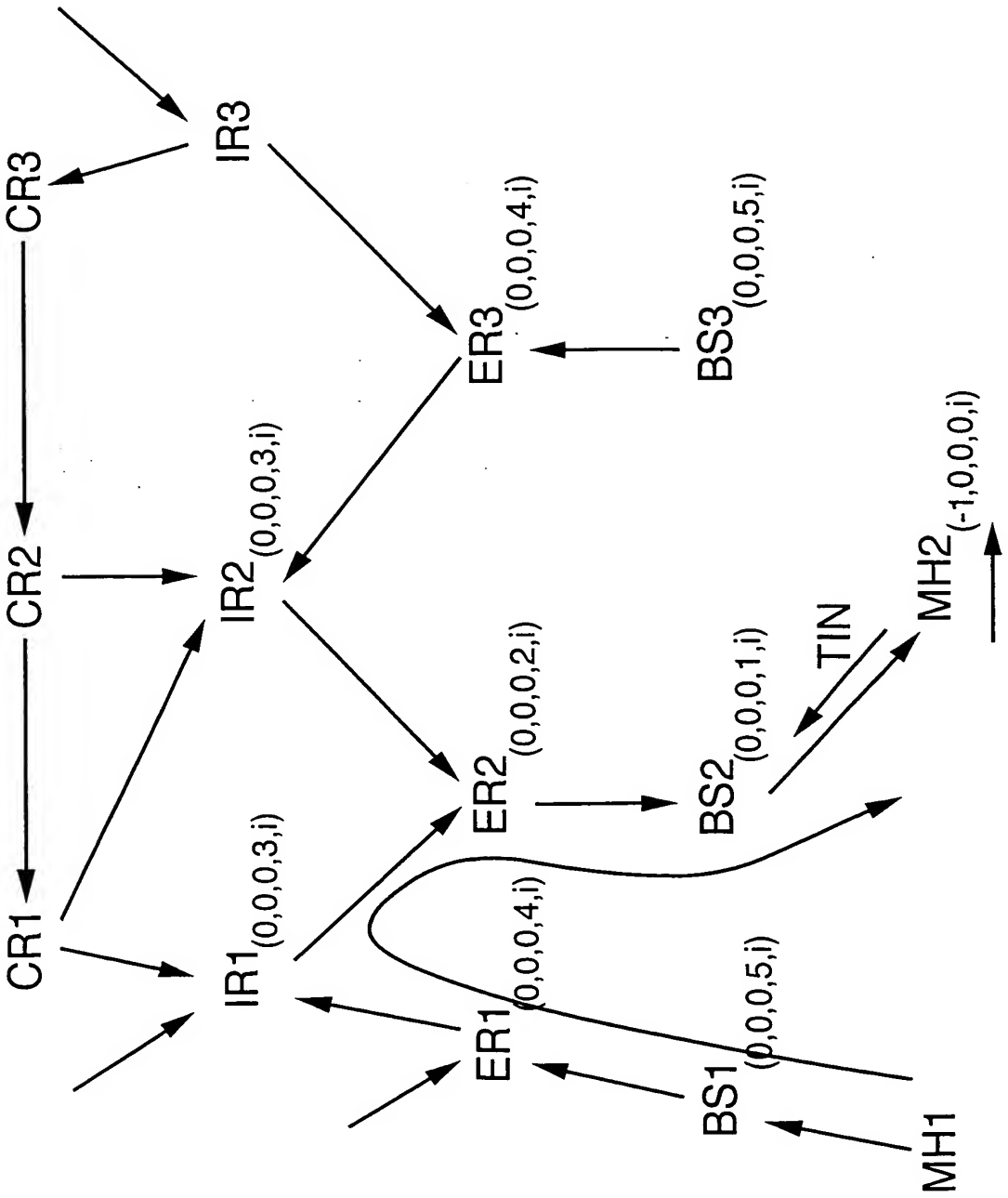

IR3
CR3
CR2
CR1
ER3(0,0,0,4,i)
BS3(0,0,0,5,i)
IR2(0,0,0,3,i)
ER2(0,0,0,2,i)
BS2(0,0,0,1,i)
TIN
MH2(-1,0,0,0,i)
IR1(0,0,0,3,i)
ER1(0,0,0,4,i)
BS1(0,0,0,5,i)
MH1

Fig.4.

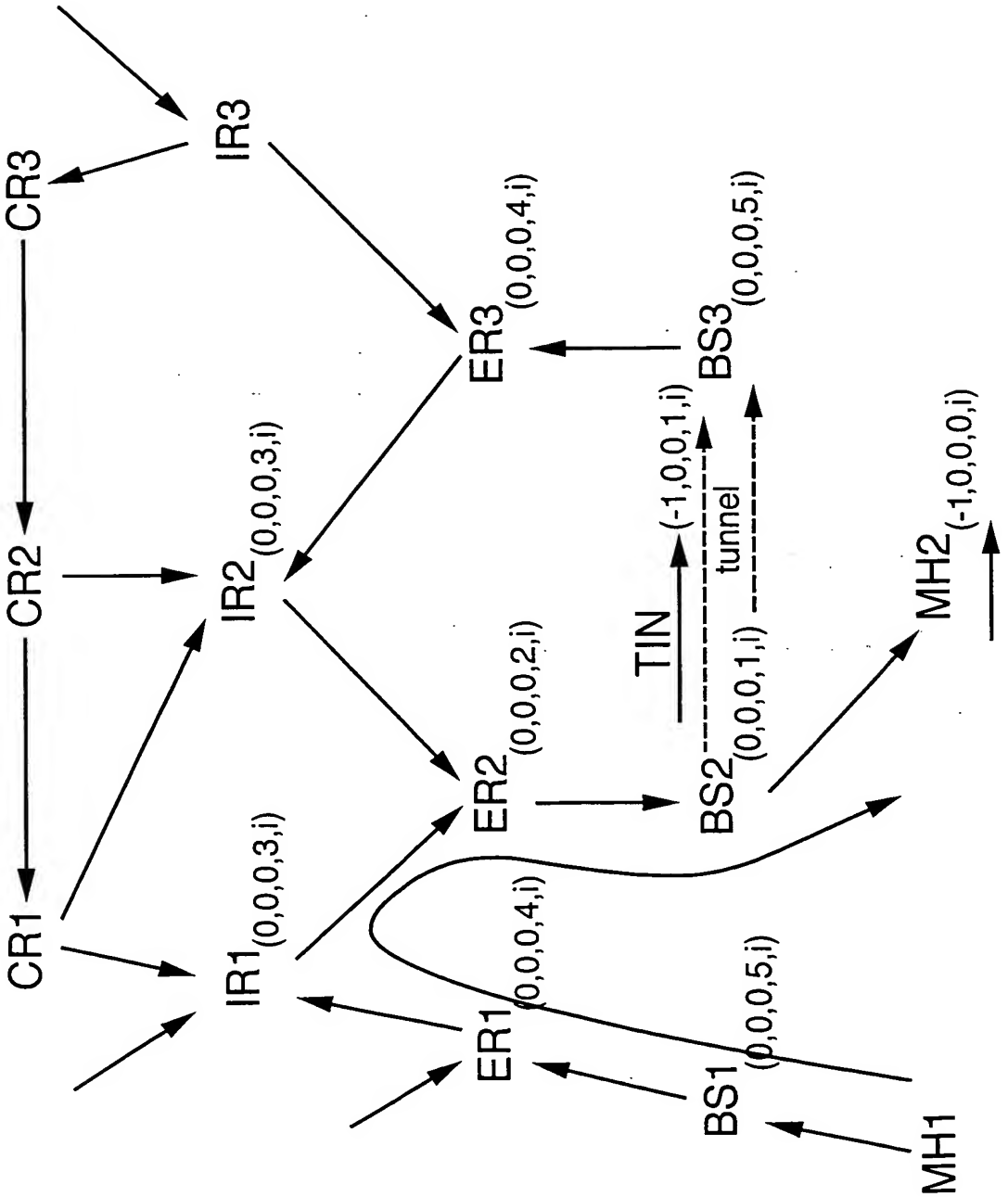

CR3
IR3
CR2
ER3 (0,0,0,4,i)
BS3 (0,0,0,5,i)
IR2 (0,0,0,3,i)
(-1,0,0,1,i)
TIN
tunnel
MH2 (-1,0,0,0,i)
ER2 (0,0,0,2,i)
BS2 (0,0,0,1,i)
CR1
IR1 (0,0,0,3,i)
ER1 (0,0,0,4,i)
BS1 (0,0,0,5,i)
MH1

Fig.5.

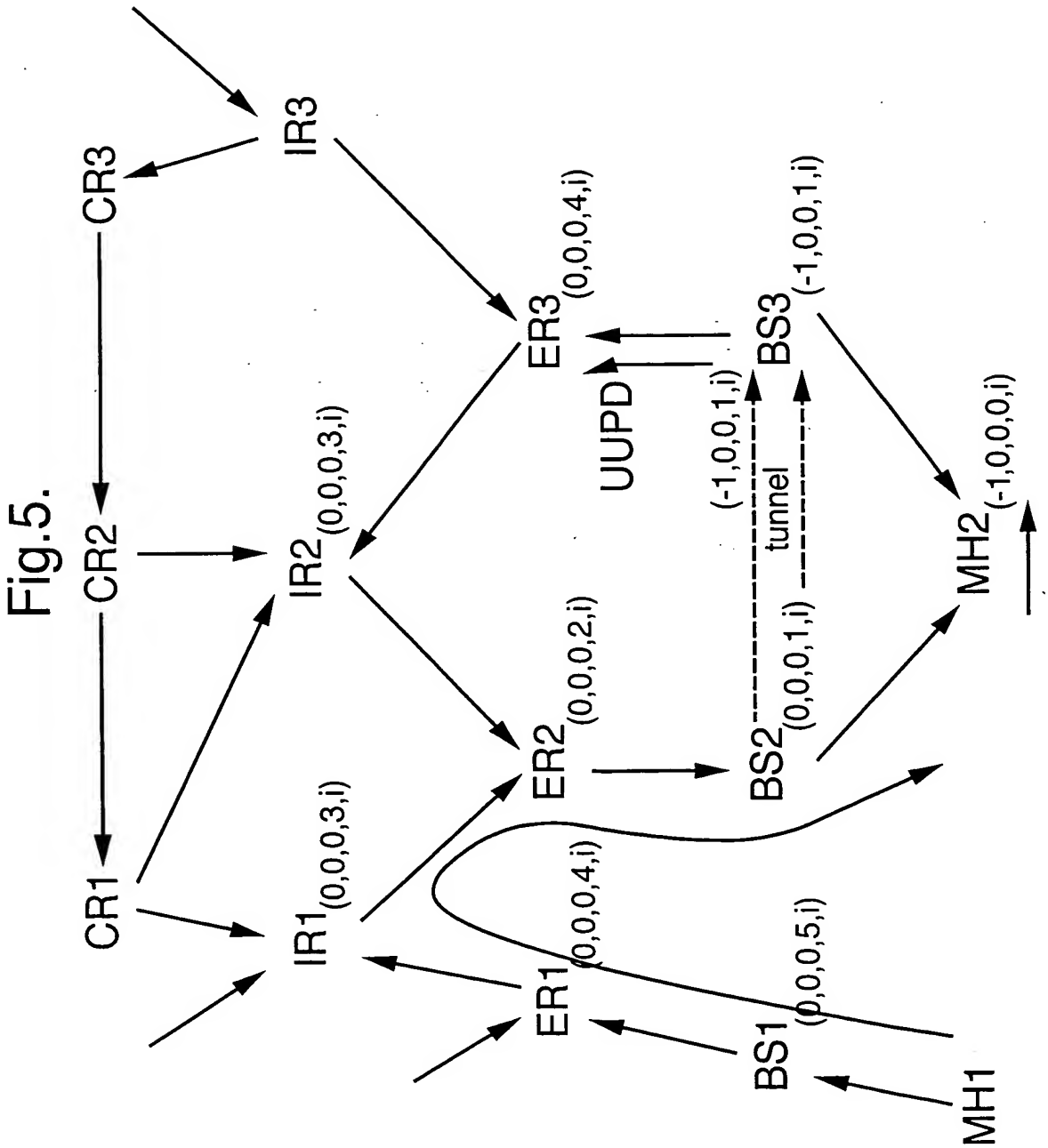

CR1
CR2
CR3
IR1(0,0,0,3,i)
IR2(0,0,0,3,i)
IR3
ER1(0,0,0,4,i)
ER2(0,0,0,2,i)
ER3(0,0,0,4,i)
UUPD
BS1(0,0,0,5,i)
BS2(0,0,0,1,i)
BS3(-1,0,0,1,i)
(-1,0,0,1,i)
tunnel
MH1
MH2(-1,0,0,0,i)

Fig.6.

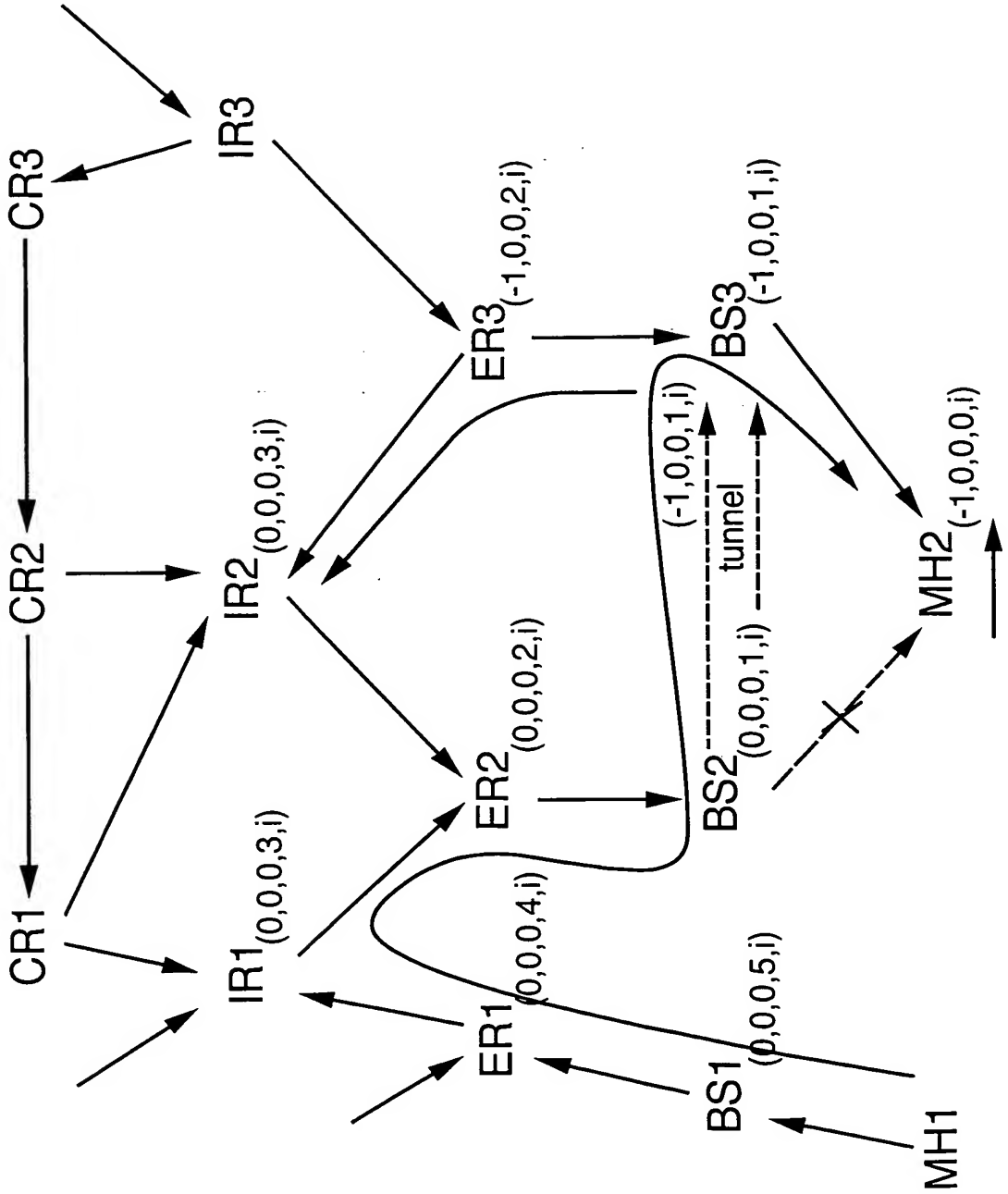

CR3
CR2
CR1
IR3
IR2 (0,0,0,3,i)
IR1 (0,0,0,3,i)
ER3 (-1,0,0,2,i)
ER2 (0,0,0,2,i)
ER1 (0,0,0,4,i)
BS3 (-1,0,0,1,i)
BS2 (0,0,0,1,i)
BS1 (0,0,0,5,i)
(-1,0,0,1,i)
tunnel
MH2 (-1,0,0,0,i)
MH1

Fig.7.

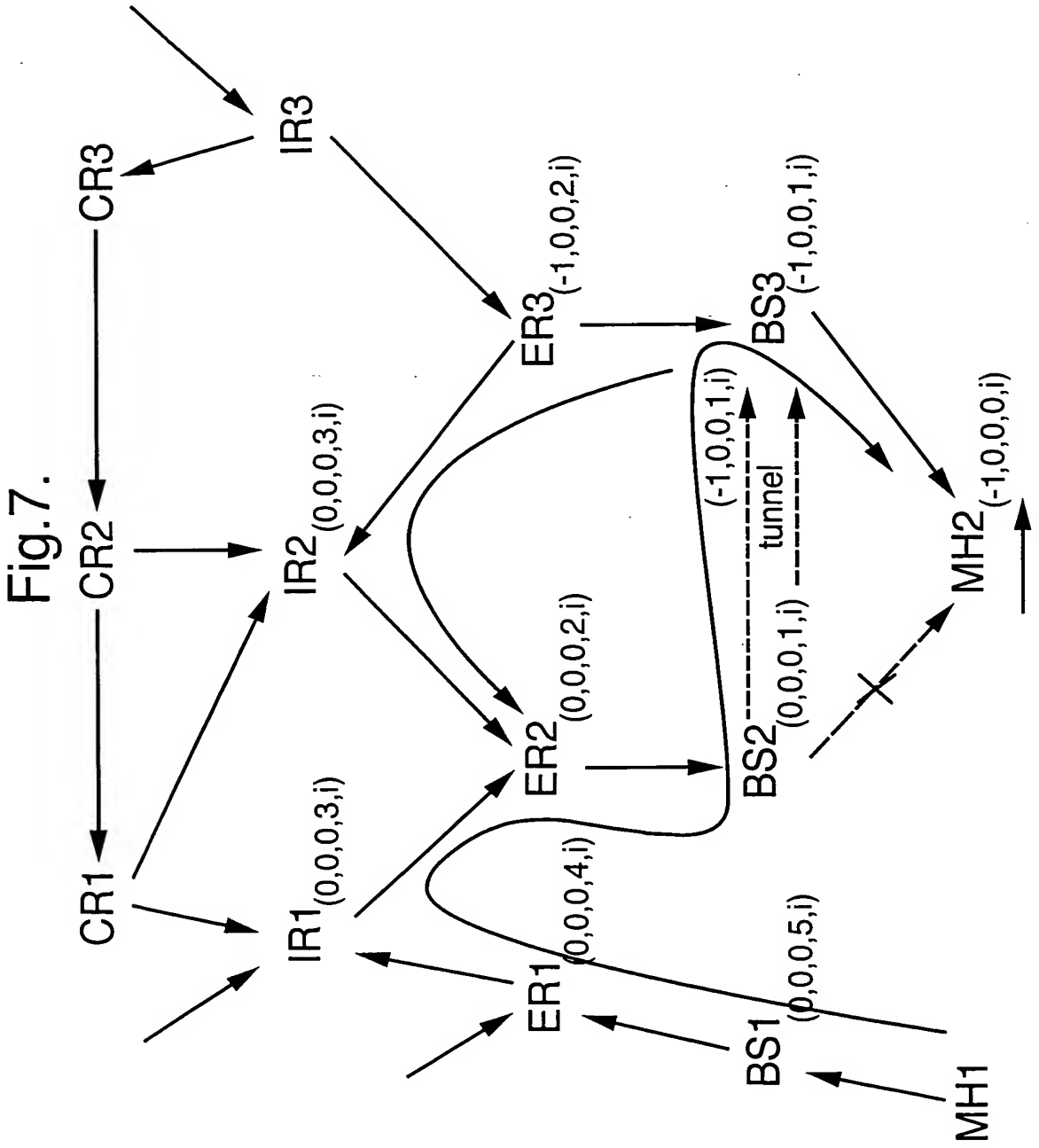

CR3
CR2
CR1
IR3
IR2(0,0,0,3,i)
IR1(0,0,0,3,i)
ER3(-1,0,0,2,i)
ER2(0,0,0,2,i)
ER1(0,0,0,4,i)
BS3(-1,0,0,1,i)
BS2(0,0,0,1,i)
BS1(0,0,0,5,i)
(-1,0,0,1,i)
tunnel
MH2(-1,0,0,0,i)
MH1

Fig.8.

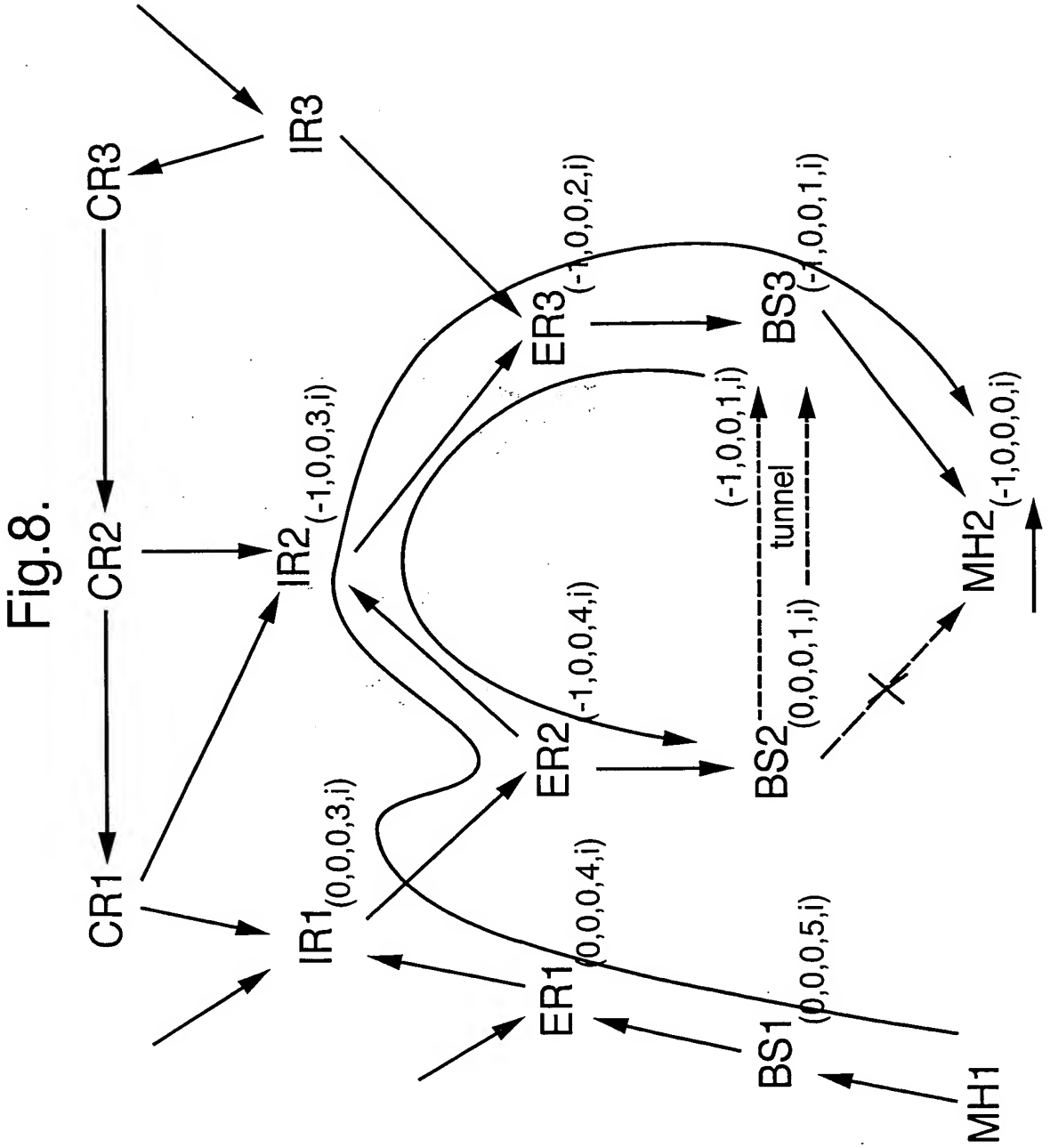

CR1
CR2
CR3
IR1(0,0,0,3,i)
IR2(-1,0,0,3,i)
IR3
ER1(0,0,0,4,i)
ER2(-1,0,0,4,i)
ER3(-1,0,0,2,i)
BS1(0,0,0,5,i)
BS2(0,0,0,1,i)
BS3(-1,0,0,1,i)
MH1
MH2(-1,0,0,0,i)
(-1,0,0,1,i)
tunnel

Fig.9.

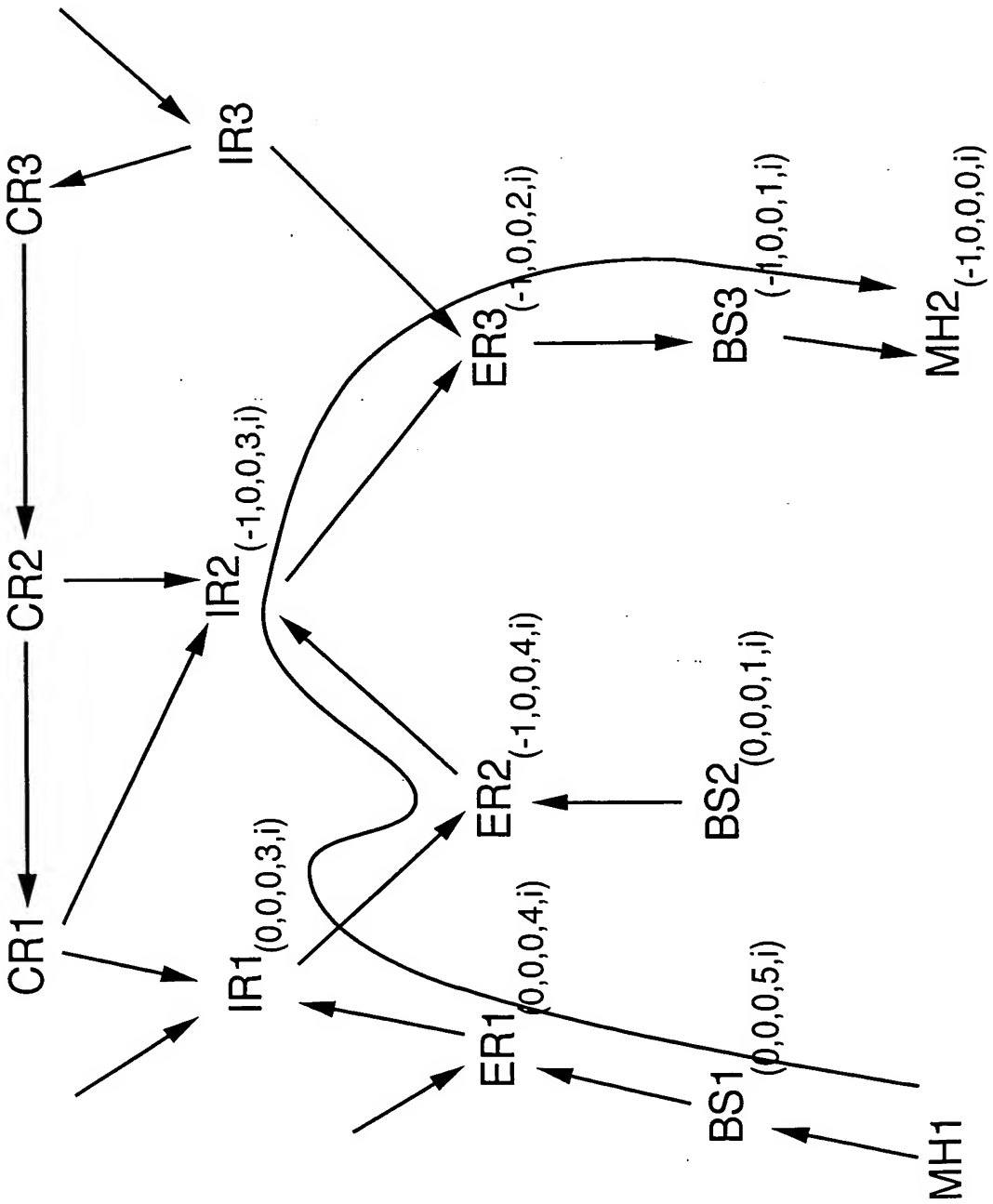
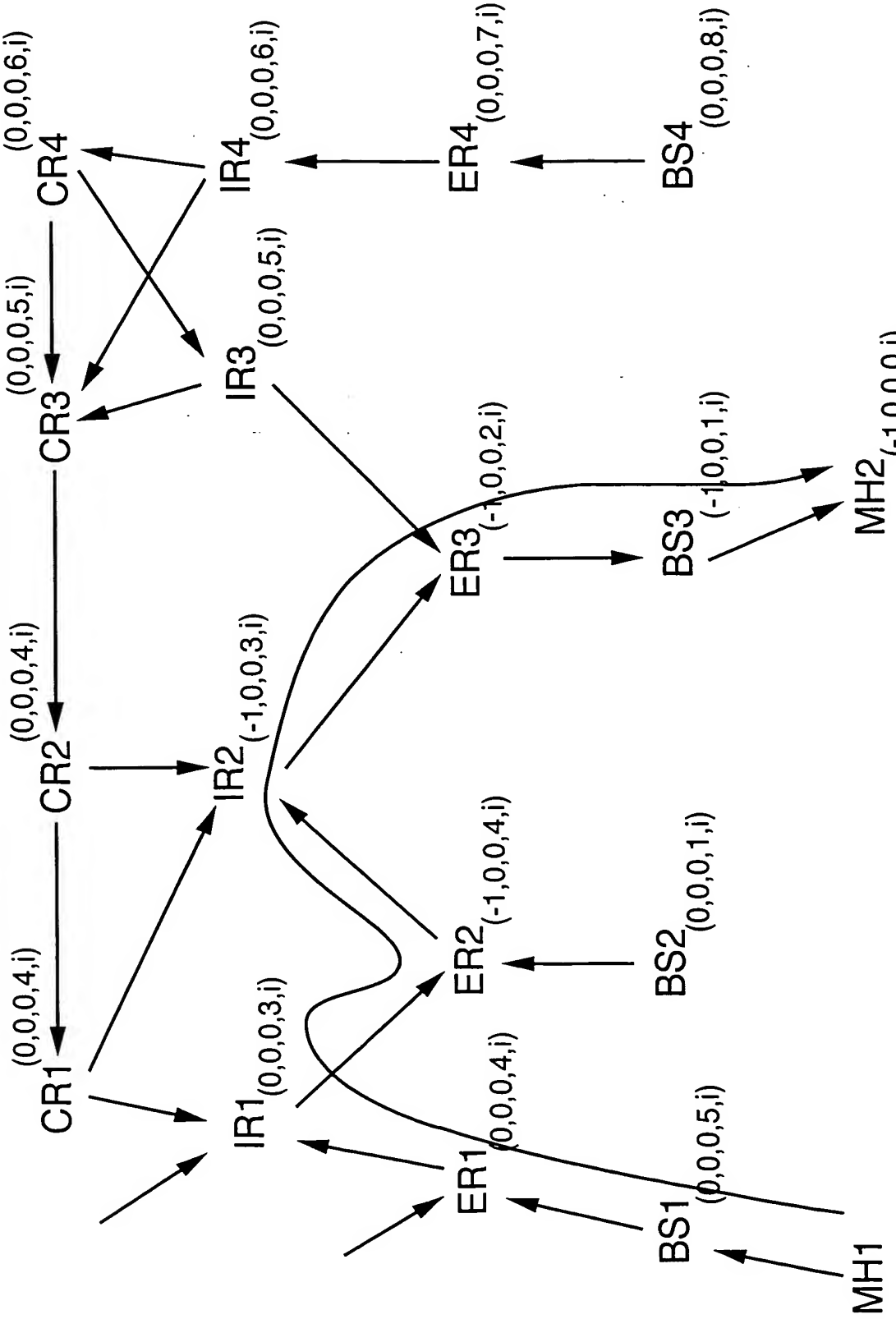

CR3
CR2
CR1
IR3
IR2(-1,0,0,3,i)
IR1(0,0,0,3,i)
ER3(-1,0,0,2,i)
ER2(-1,0,0,4,i)
ER1(0,0,0,4,i)
BS3(-1,0,0,1,i)
BS2(0,0,0,1,i)
BS1(0,0,0,5,i)
MH2(-1,0,0,0,i)
MH1

Fig.10.


CR1
(0,0,0,4,i)
CR2
(0,0,0,4,i)
CR3
(0,0,0,5,i)
CR4
(0,0,0,6,i)
IR1(0,0,0,3,i)
IR2(-1,0,0,3,i)
IR3(0,0,0,5,i)
IR4(0,0,0,6,i)
ER1(0,0,0,4,i)
ER2(-1,0,0,4,i)
ER3(-1,0,0,2,i)
ER4(0,0,0,7,i)
BS1(0,0,0,5,i)
BS2(0,0,0,1,i)
BS3(-1,0,0,1,i)
BS4(0,0,0,8,i)
MH1
MH2(-1,0,0,0,i)

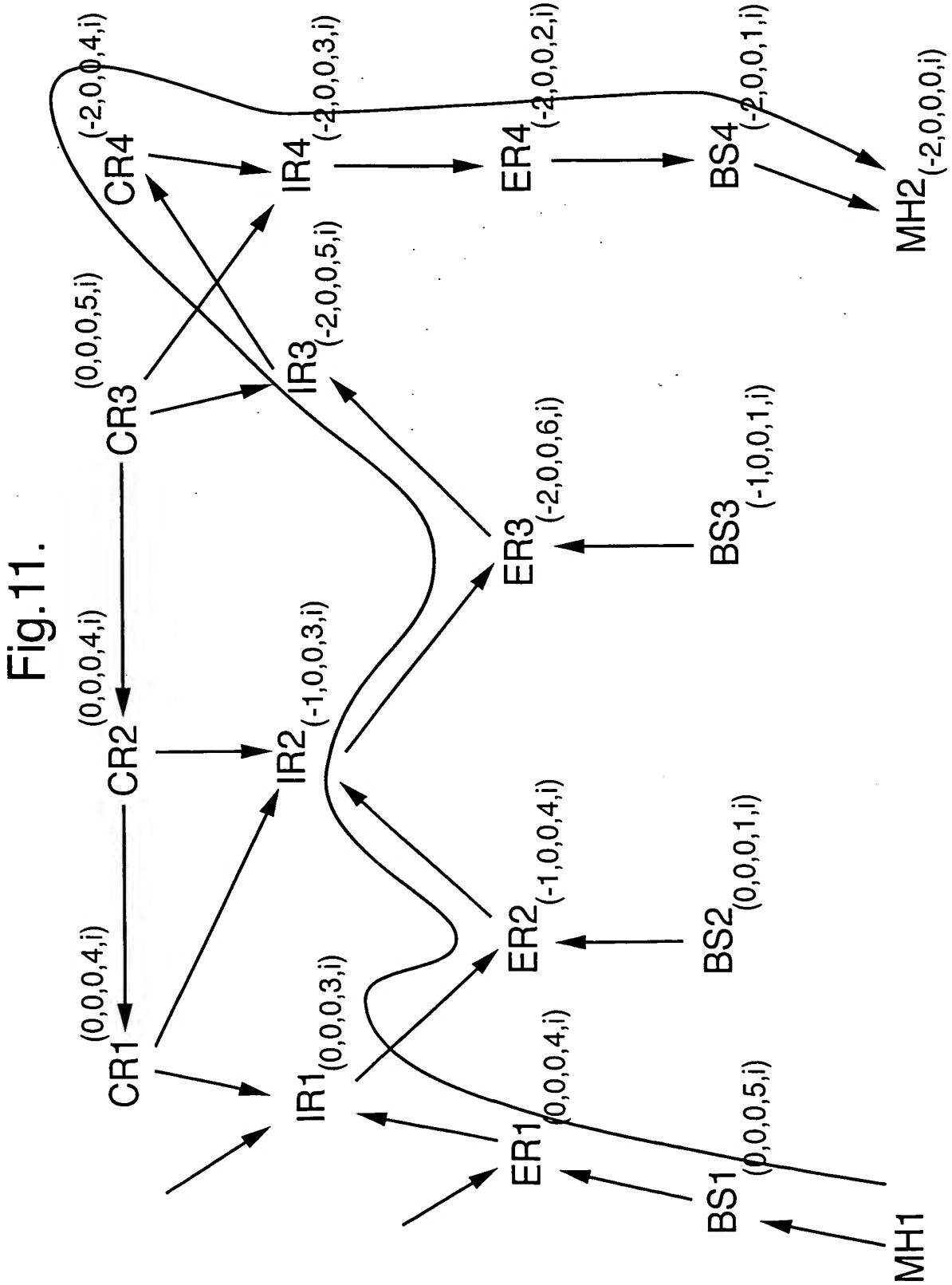

CR4
(-2,0,0,4,i)
IR4
(-4,0,0,3,i)
ER4
(-4,0,0,2,i)
BS4
(-2,0,0,1,i)
MH2
(-2,0,0,0,i)
CR3
(0,0,0,5,i)
IR3
(-2,0,0,5,i)
ER3
(-2,0,0,6,i)
BS3
(-1,0,0,1,i)
CR2
(0,0,0,4,i)
IR2
(-1,0,0,3,i)
ER2
(-1,0,0,4,i)
BS2
(0,0,0,1,i)
CR1
(0,0,0,4,i)
IR1
(0,0,0,3,i)
ER1
(0,0,0,4,i)
BS1
(0,0,0,5,i)
MH1

Fig.11.

Fig.12.

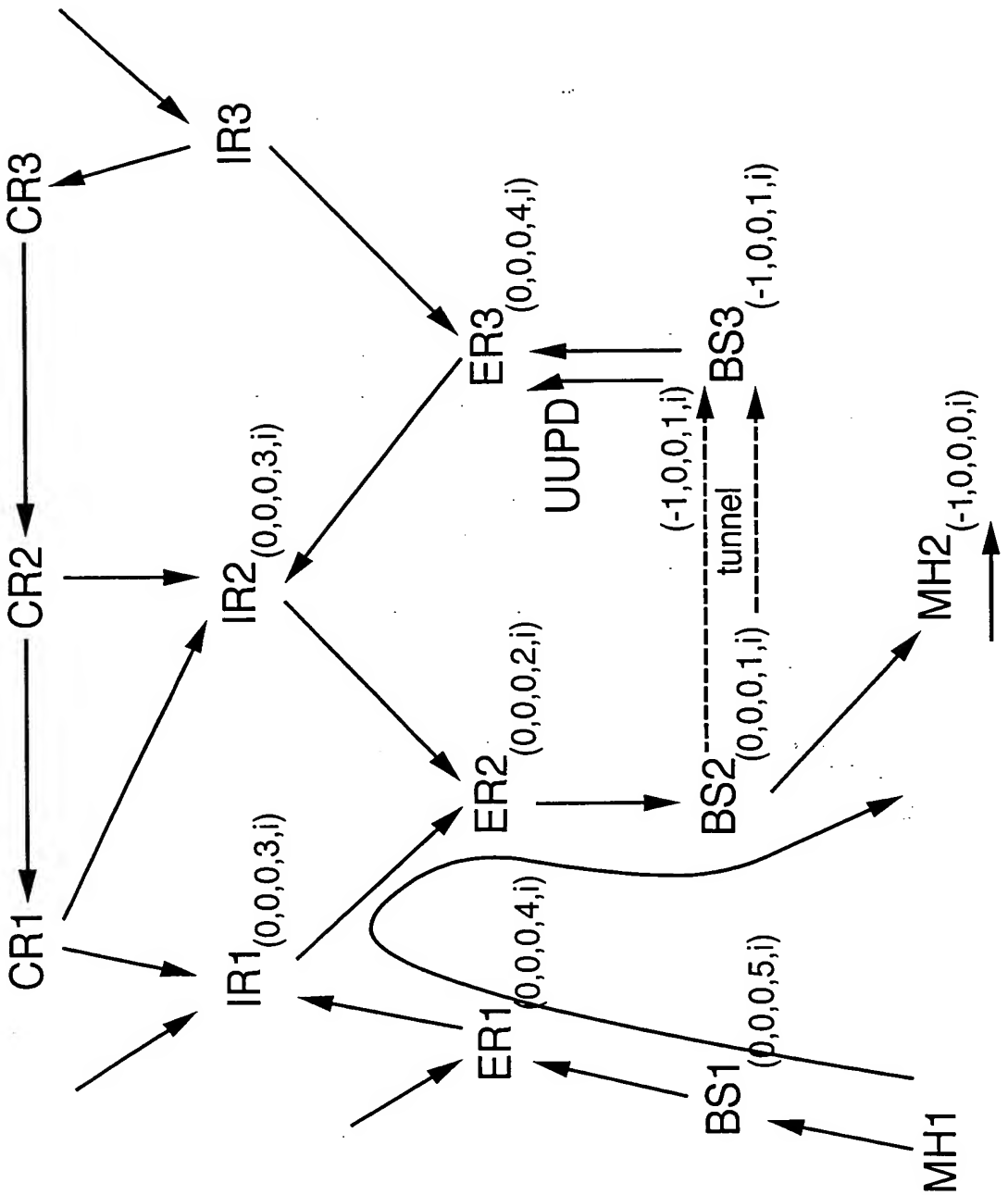

CR3
CR2
CR1
IR3
IR2(0,0,0,3,i)
IR1(0,0,0,3,i)
ER3(0,0,0,4,i)
ER2(0,0,0,2,i)
ER1(0,0,0,4,i)
UUPD
BS3(-1,0,0,1,i)
BS2(0,0,0,1,i)
BS1(0,0,0,5,i)
(-1,0,0,1,i)
tunnel
MH2(-1,0,0,0,i)
MH1

Fig.13.

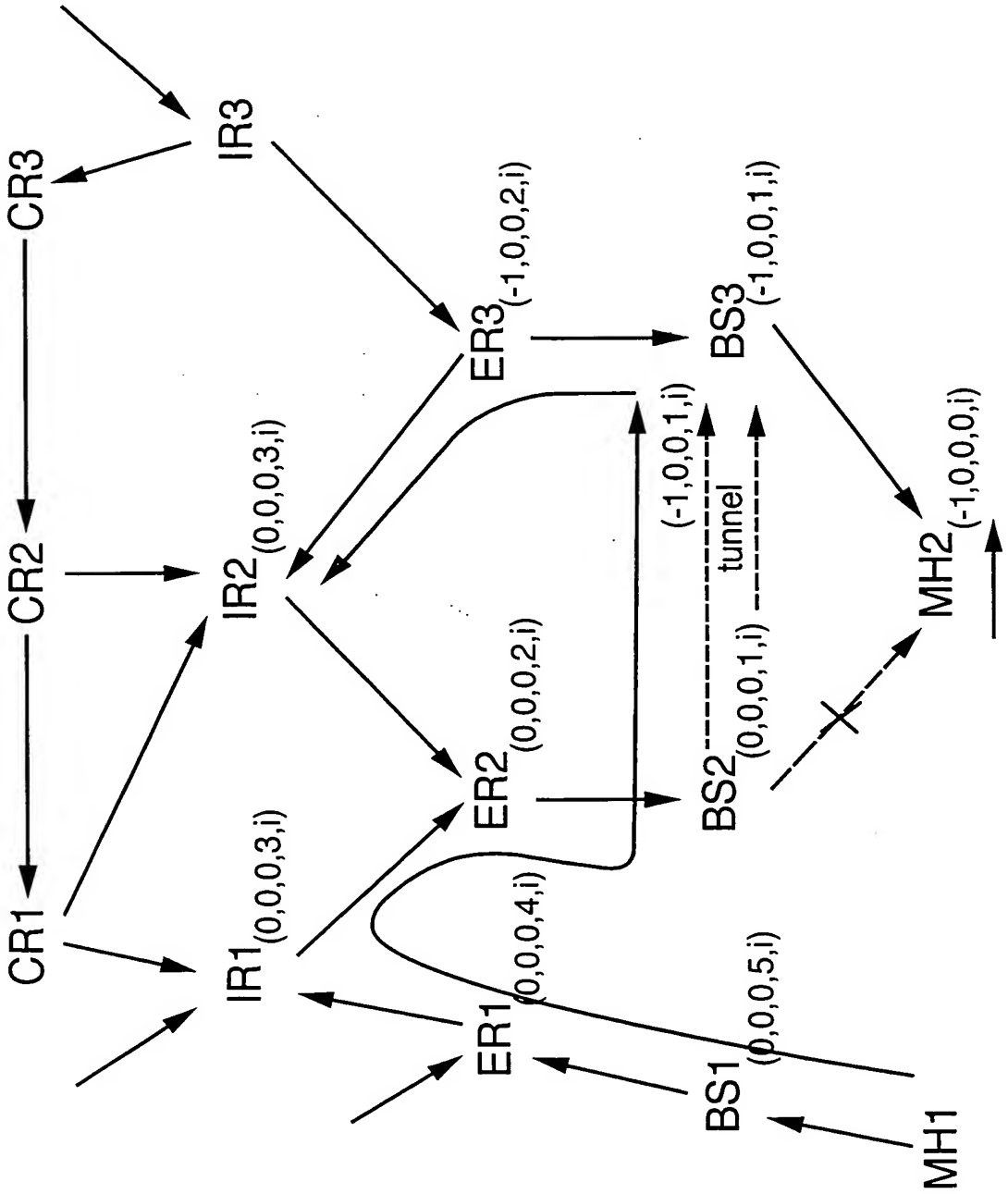

CR3
CR2
CR1
IR3
IR2 (0,0,0,3,i)
IR1 (0,0,0,3,i)
ER3 (-1,0,0,2,i)
ER2 (0,0,0,2,i)
ER1 (0,0,0,4,i)
BS3 (-1,0,0,1,i)
BS2 (0,0,0,1,i)
BS1 (0,0,0,5,i)
(-1,0,0,1,i)
tunnel
MH2 (-1,0,0,0,i)
MH1

Fig.14.

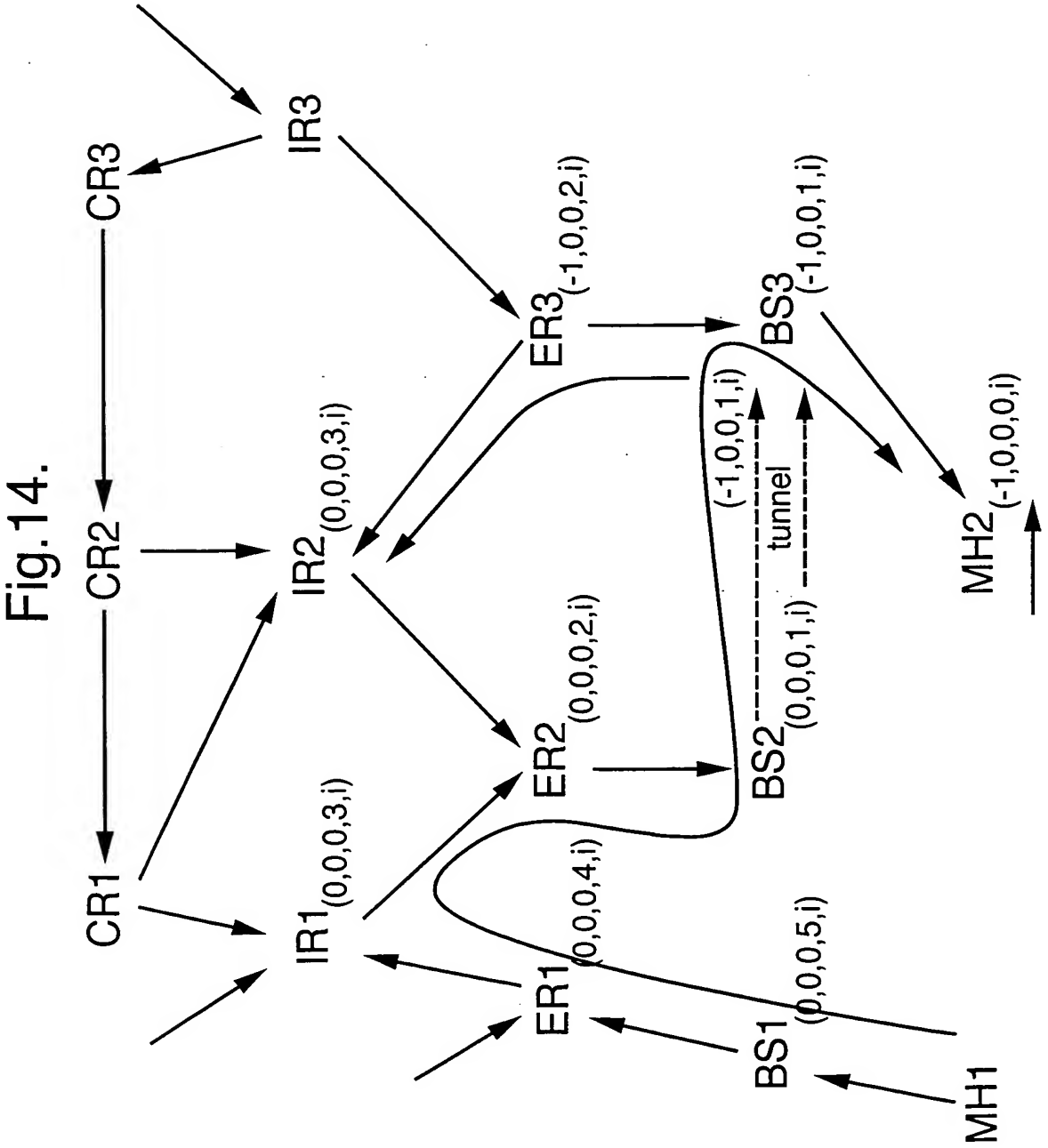

IR3
CR3
CR2
CR1
IR2 (0,0,0,3,i)
IR1 (0,0,0,3,i)
ER3 (-1,0,0,2,i)
ER2 (0,0,0,2,i)
ER1 (0,0,0,4,i)
BS3 (-1,0,0,1,i)
BS2 (0,0,0,1,i)
BS1 (0,0,0,5,i)
(-1,0,0,1,i)
tunnel
MH2 (-1,0,0,0,i)
MH1

Fig.15.

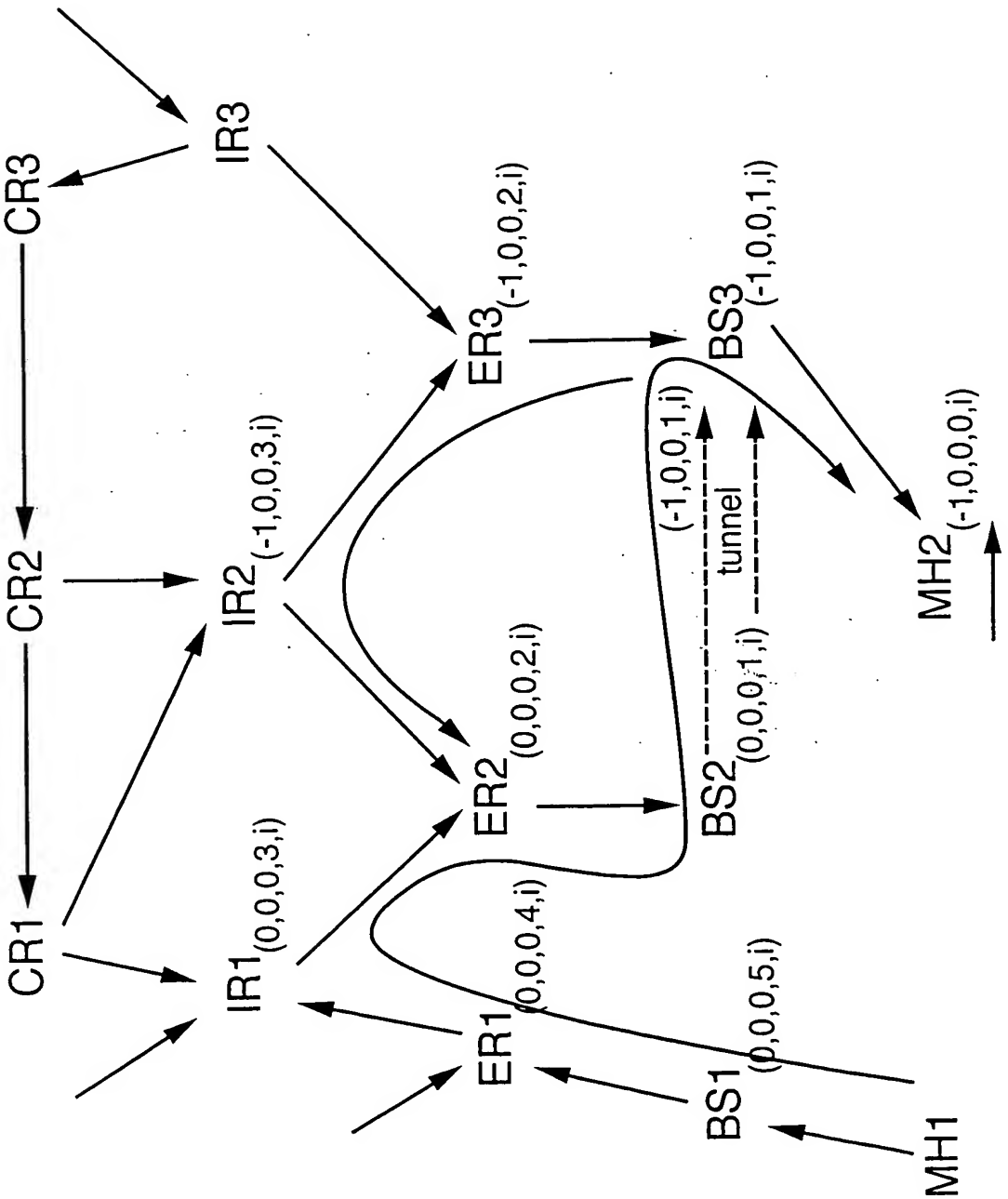

CR3
CR2
CR1
IR3
IR2(-1,0,0,3,i)
IR1(0,0,0,3,i)
ER3(-1,0,0,2,i)
ER2(0,0,0,2,i)
ER1(0,0,0,4,i)
BS3
(-1,0,0,1,i)
BS2
(0,0,0,1,i)
BS1
(0,0,0,5,i)
(-1,0,0,1,i)
tunnel
MH2(-1,0,0,0,i)
MH1

Fig.16.

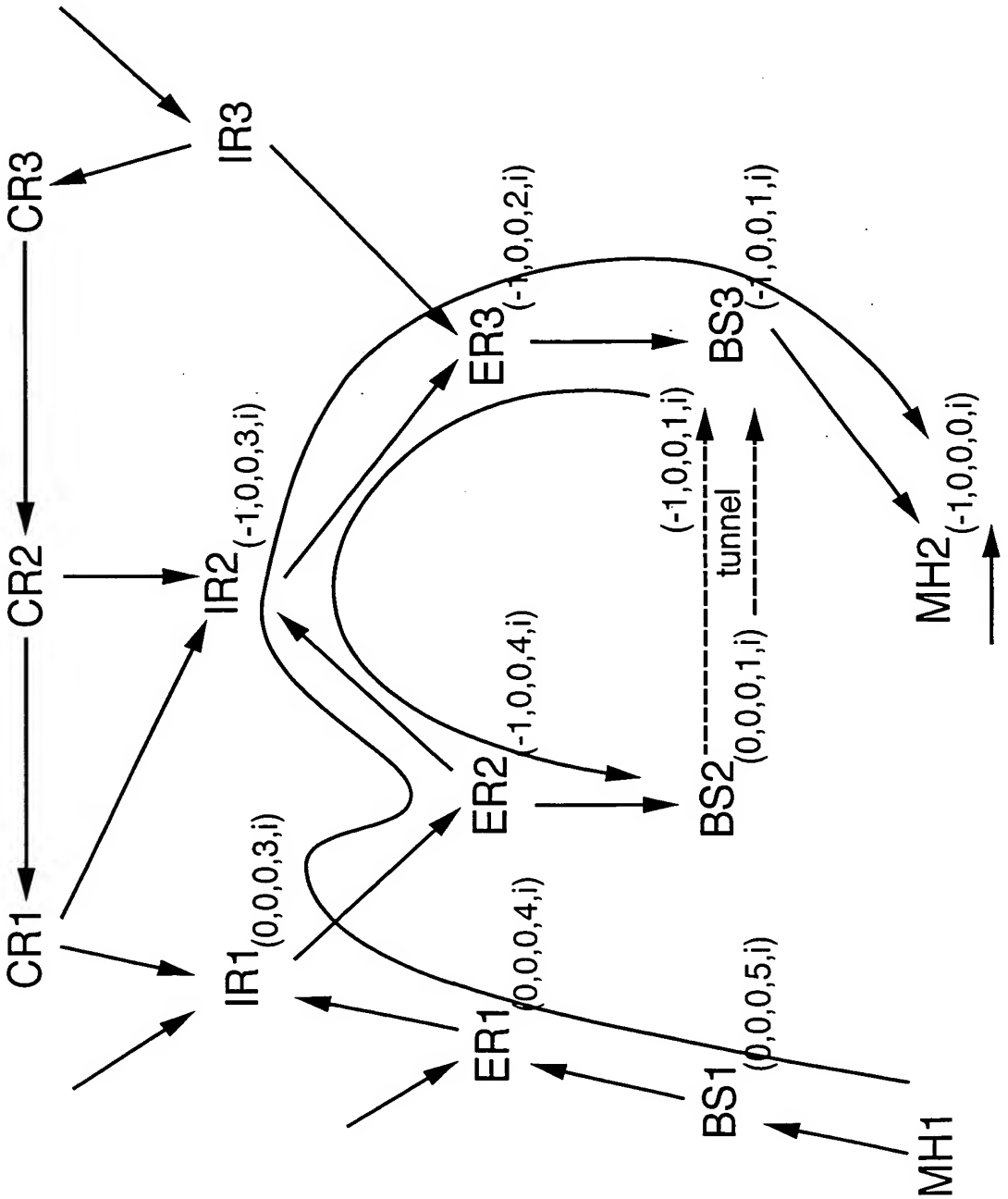

CR3
CR2
CR1
IR3
IR2(-1,0,0,3,i)
IR1(0,0,0,3,i)
ER3(-1,0,0,2,i)
ER2(-1,0,0,4,i)
ER1(0,0,0,4,i)
BS3(-1,0,0,1,i)
BS2(0,0,0,1,i)
BS1(0,0,0,5,i)
(-1,0,0,1,i)
tunnel
MH2(-1,0,0,0,i)
MH1

Fig.17.

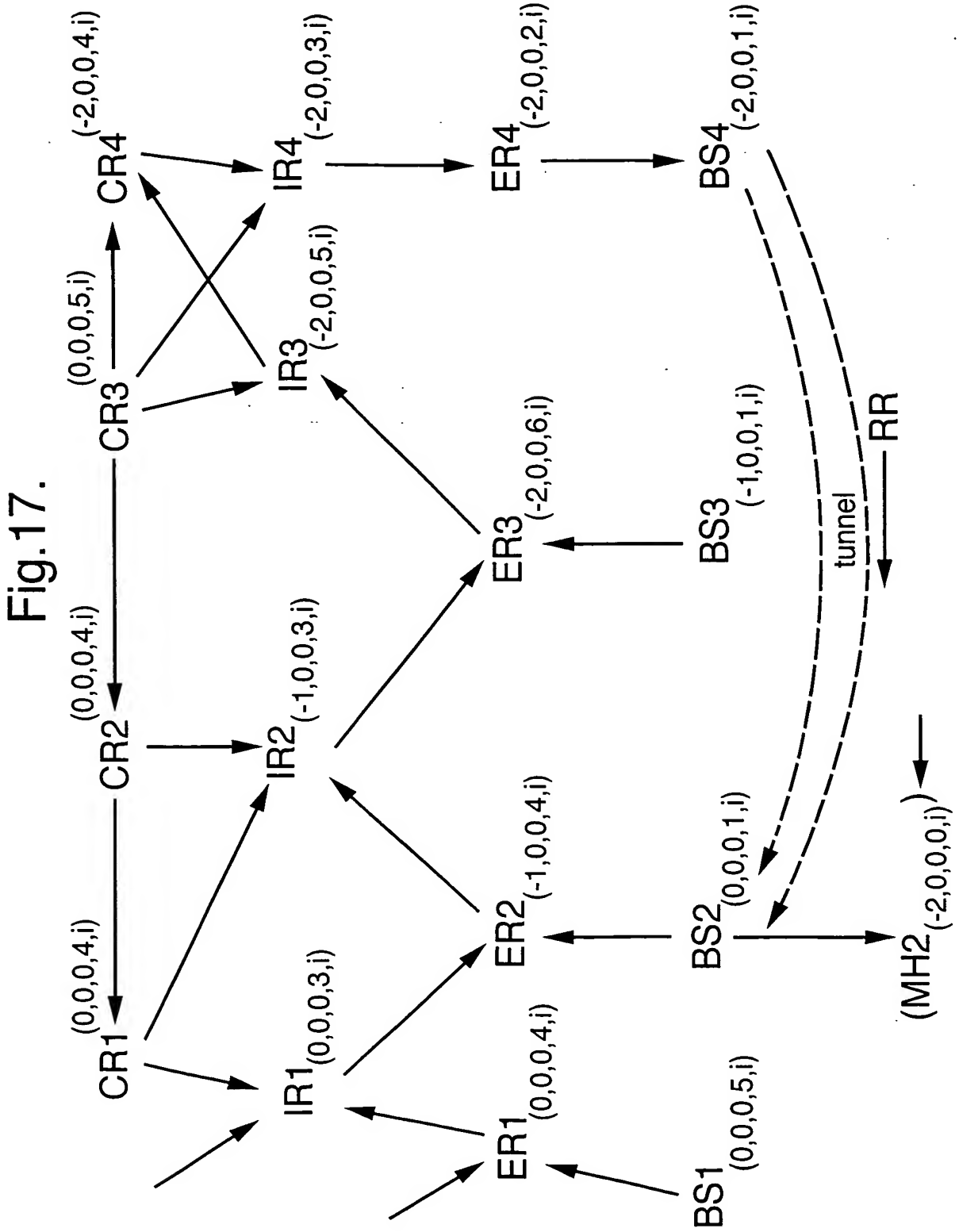

CR4
(-2,0,0,4,i)
IR4
(-2,0,0,3,i)
ER4
(-2,0,0,2,i)
BS4
(-2,0,0,1,i)
(0,0,0,5,i)
CR3
IR3
(-2,0,0,5,i)
ER3
(-2,0,0,6,i)
BS3
(-1,0,0,1,i)
RR
tunnel
(0,0,0,4,i)
CR2
IR2
(-1,0,0,3,i)
(0,0,0,4,i)
CR1
IR1
(0,0,0,3,i)
ER2
(-1,0,0,4,i)
BS2
(0,0,0,1,i)
(MH2
(-2,0,0,0,i))
ER1
(0,0,0,4,i)
BS1
(0,0,0,5,i)

Fig.18.

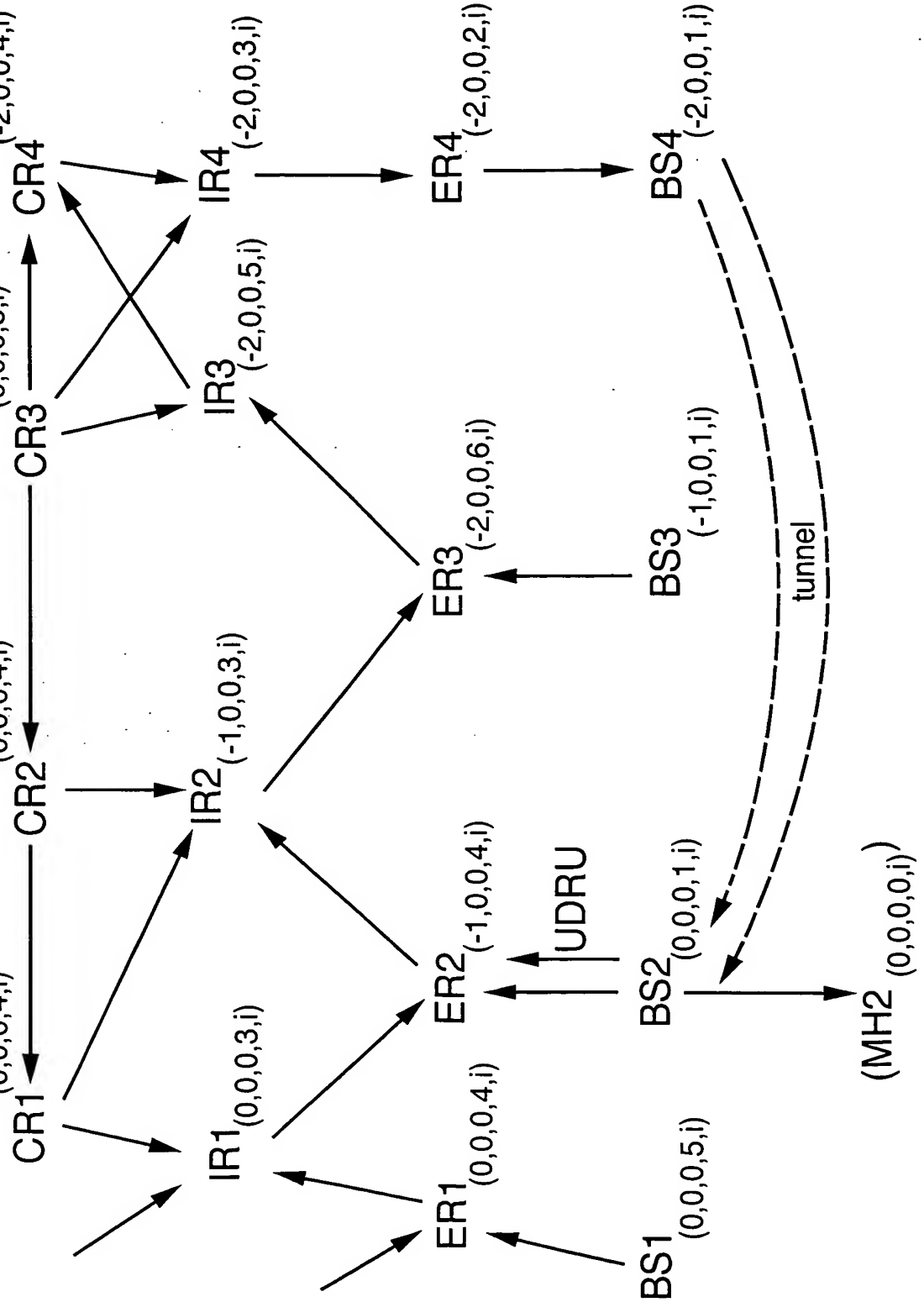

CR4 (-2,0,0,4,i)
CR3 (0,0,0,5,i)
CR2 (0,0,0,4,i)
CR1 (0,0,0,4,i)
IR4 (-2,0,0,3,i)
IR3 (-2,0,0,5,i)
IR2 (-1,0,0,3,i)
IR1 (0,0,0,3,i)
ER4 (-2,0,0,2,i)
ER3 (-2,0,0,6,i)
ER2 (-1,0,0,4,i)
ER1 (0,0,0,4,i)
BS4 (-2,0,0,1,i)
BS3 (-1,0,0,1,i)
BS2 (0,0,0,1,i)
BS1 (0,0,0,5,i)
UDRU
tunnel
(MH2 (0,0,0,0,i))

Fig.19.

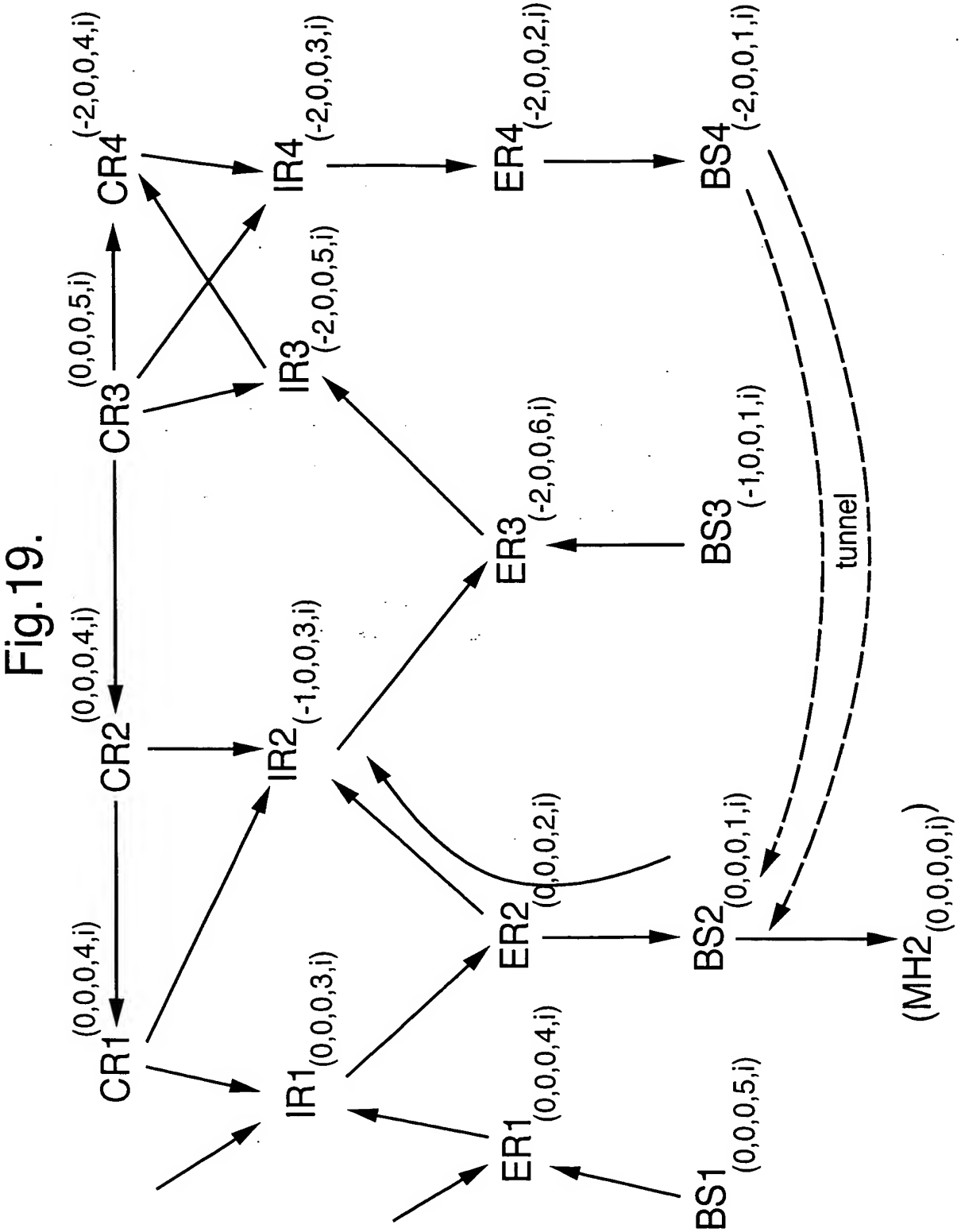

CR4 (-2,0,0,4,i)
CR3 (0,0,0,5,i)
CR2 (0,0,0,4,i)
CR1 (0,0,0,4,i)
IR4 (-2,0,0,3,i)
IR3 (-2,0,0,5,i)
IR2 (-1,0,0,3,i)
IR1 (0,0,0,3,i)
ER4 (-2,0,0,2,i)
ER3 (-2,0,0,6,i)
ER2 (0,0,0,2,i)
ER1 (0,0,0,4,i)
BS4 (-2,0,0,1,i)
BS3 (-1,0,0,1,i)
BS2 (0,0,0,1,i)
BS1 (0,0,0,5,i)
tunnel
(MH2 (0,0,0,0,i))

Fig.20.

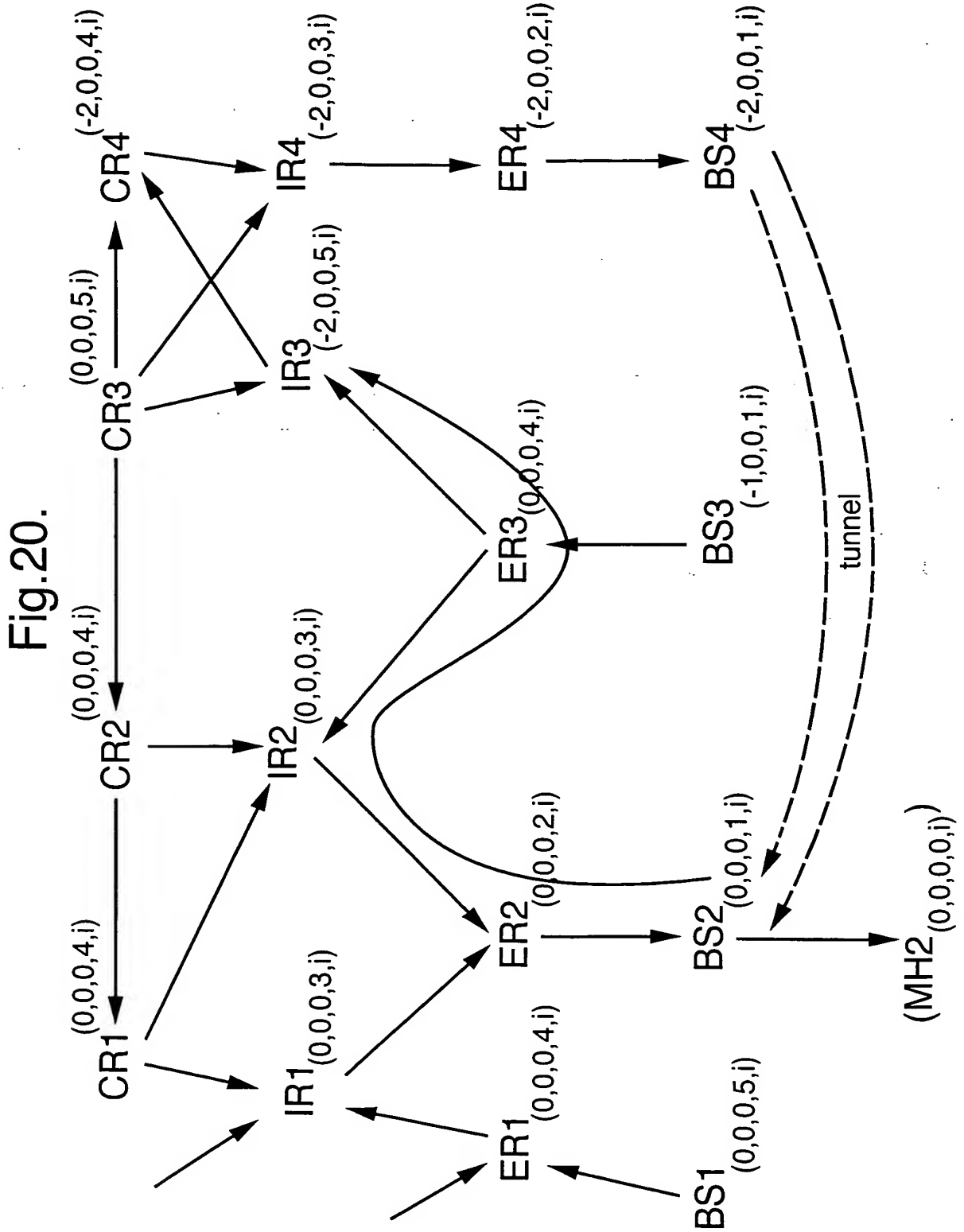

CR4
(-2,0,0,4,i)
IR4
(-2,0,0,3,i)
ER4
(-2,0,0,2,i)
BS4
(-2,0,0,1,i)
(0,0,0,5,i)
CR3
IR3
(-2,0,0,5,i)
ER3
(0,0,0,4,i)
BS3
(-1,0,0,1,i)
tunnel
(0,0,0,4,i)
CR2
IR2
(0,0,0,3,i)
ER2
(0,0,0,2,i)
BS2
(0,0,0,1,i)
(MH2
(0,0,0,0,i))
(0,0,0,4,i)
CR1
IR1
(0,0,0,3,i)
ER1
(0,0,0,4,i)
BS1
(0,0,0,5,i)

Fig.21.

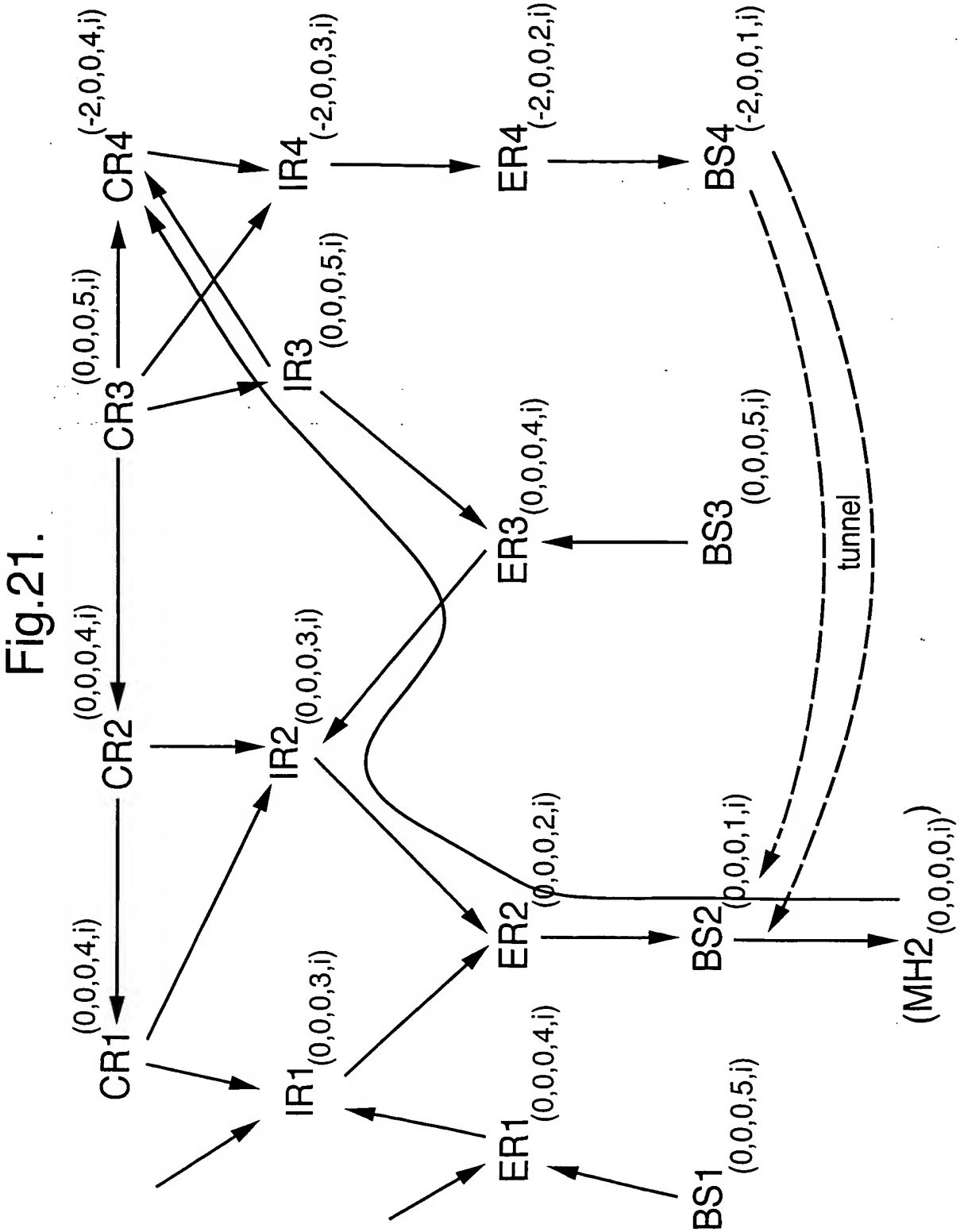

CR4
(-2,0,0,4,i)
CR3
(0,0,0,5,i)
CR2
(0,0,0,4,i)
CR1
(0,0,0,4,i)
IR4
(-2,0,0,3,i)
IR3
(0,0,0,5,i)
IR2
(0,0,0,3,i)
IR1
(0,0,0,3,i)
ER4
(-2,0,0,2,i)
ER3
(0,0,0,4,i)
ER2
(0,0,0,2,i)
ER1
(0,0,0,4,i)
BS4
(-2,0,0,1,i)
BS3
(0,0,0,5,i)
BS2
(0,0,0,1,i)
BS1
(0,0,0,5,i)
tunnel
(MH2(0,0,0,0,i))

Fig.22.

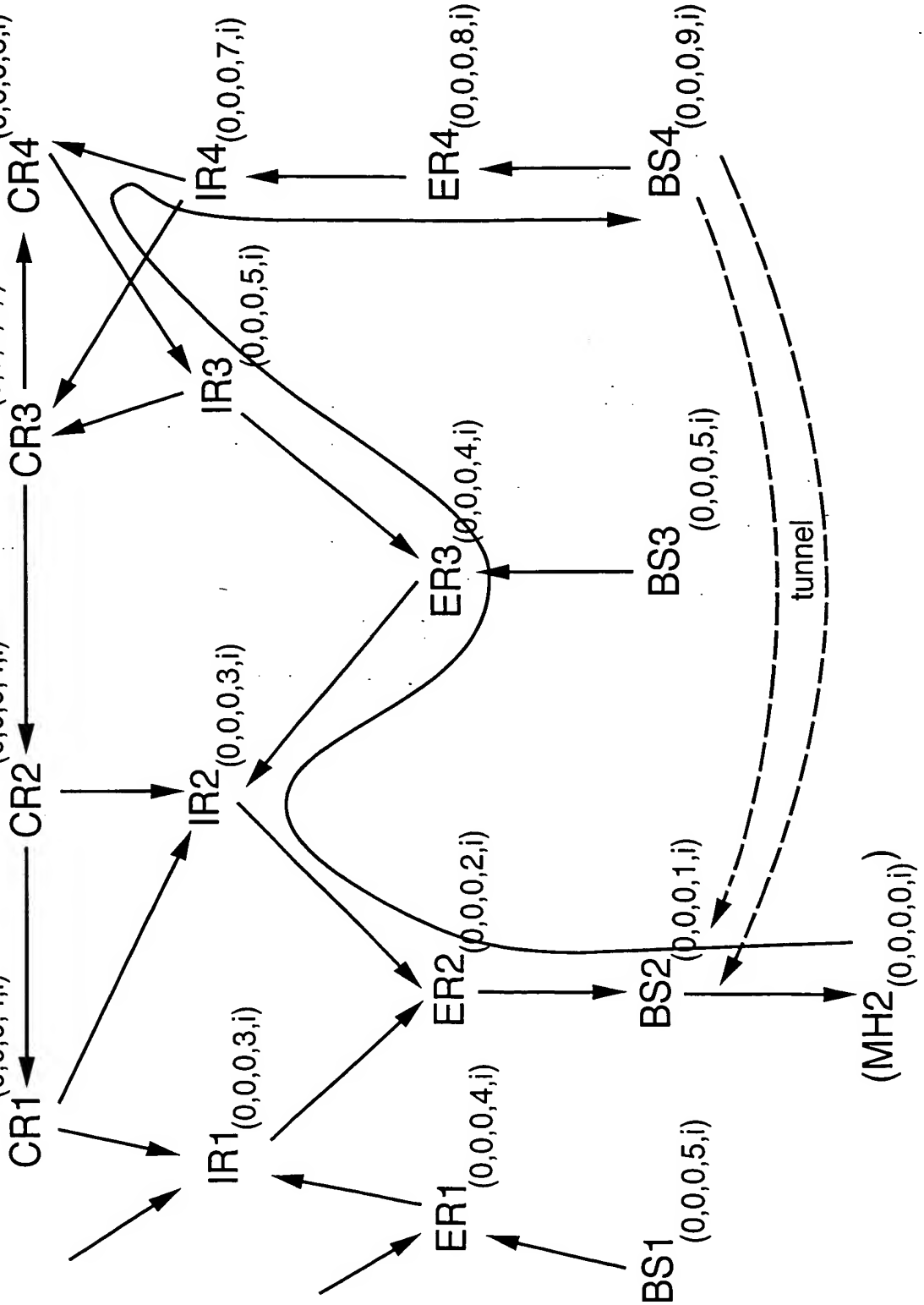

CR4
(0,0,0,6,i)
CR3
(0,0,0,5,i)
CR2
(0,0,0,4,i)
CR1
(0,0,0,4,i)
IR4(0,0,0,7,i)
IR3(0,0,0,5,i)
IR2(0,0,0,3,i)
IR1(0,0,0,3,i)
ER4(0,0,0,8,i)
ER3(0,0,0,4,i)
ER2(0,0,0,2,i)
ER1(0,0,0,4,i)
BS4(0,0,0,9,i)
BS3(0,0,0,5,i)
BS2(0,0,0,1,i)
BS1(0,0,0,5,i)
tunnel
(MH2(0,0,0,0,i))

Fig.23.

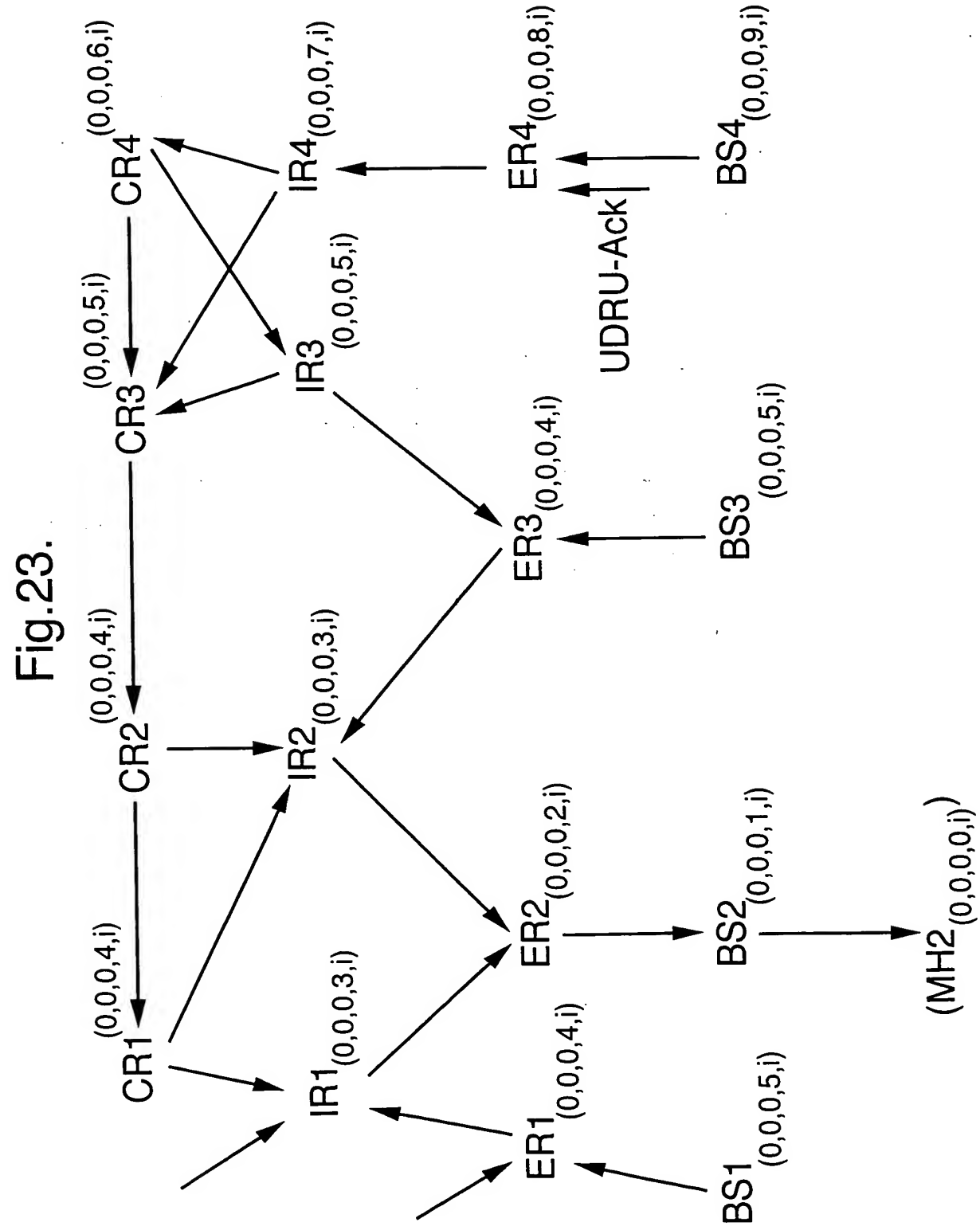

CR1
(0,0,0,4,i)
CR2
(0,0,0,4,i)
CR3
(0,0,0,5,i)
CR4
(0,0,0,6,i)
IR1(0,0,0,3,i)
IR2(0,0,0,3,i)
IR3(0,0,0,5,i)
IR4(0,0,0,7,i)
ER1(0,0,0,4,i)
ER2(0,0,0,2,i)
ER3(0,0,0,4,i)
ER4(0,0,0,8,i)
BS1(0,0,0,5,i)
BS2(0,0,0,1,i)
BS3(0,0,0,5,i)
BS4(0,0,0,9,i)
UDRU-Ack
(MH2(0,0,0,0,i))

Fig.24.

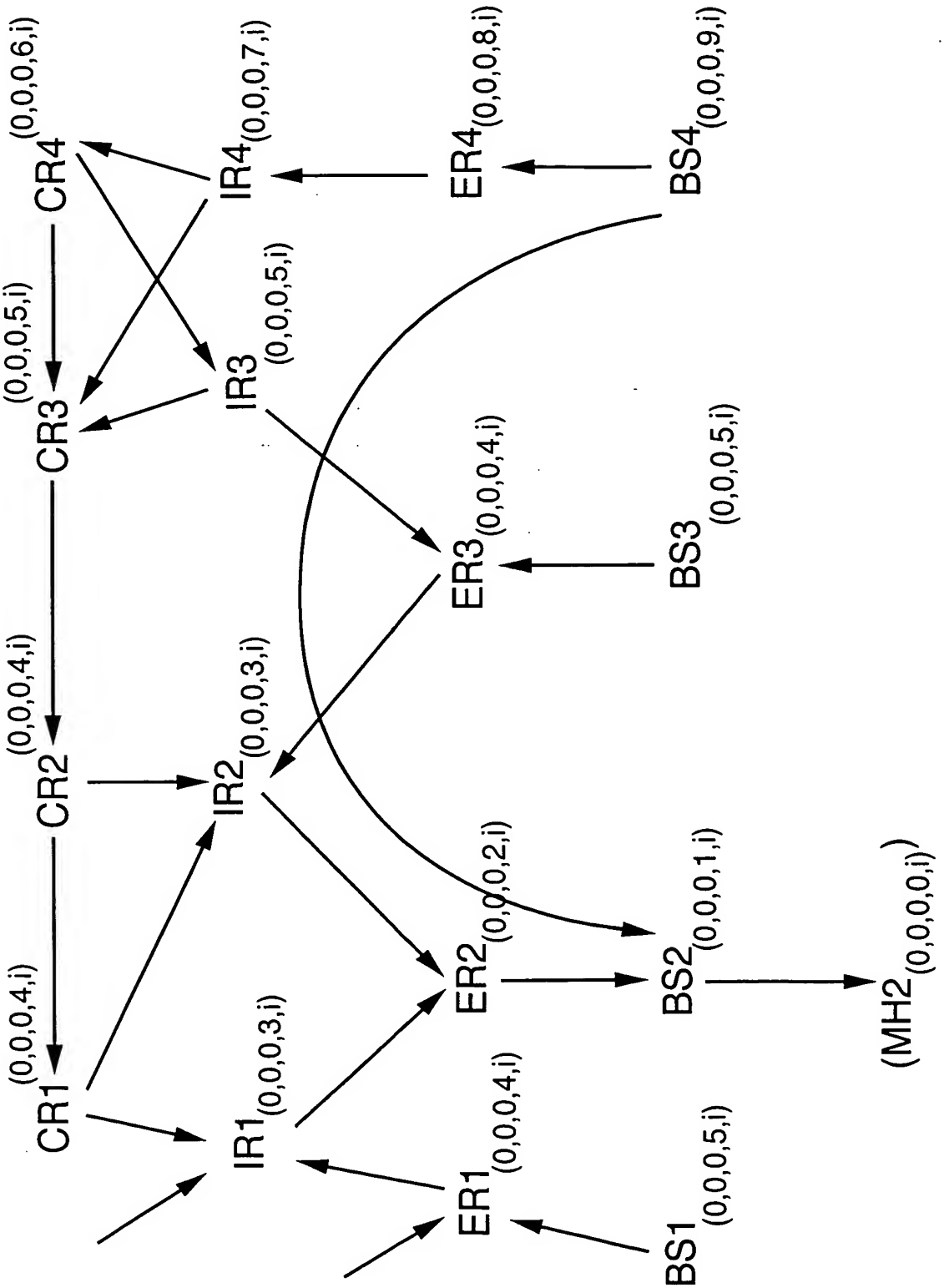

CR4 (0,0,0,6,i)
IR4 (0,0,0,7,i)
ER4 (0,0,0,8,i)
BS4 (0,0,0,9,i)
(0,0,0,5,i)
CR3
IR3 (0,0,0,5,i)
ER3 (0,0,0,4,i)
BS3 (0,0,0,5,i)
(0,0,0,4,i)
CR2
IR2 (0,0,0,3,i)
ER2 (0,0,0,2,i)
BS2 (0,0,0,1,i)
(MH2 (0,0,0,0,i))
(0,0,0,4,i)
CR1
IR1 (0,0,0,3,i)
ER1 (0,0,0,4,i)
BS1 (0,0,0,5,i)

Fig.25.

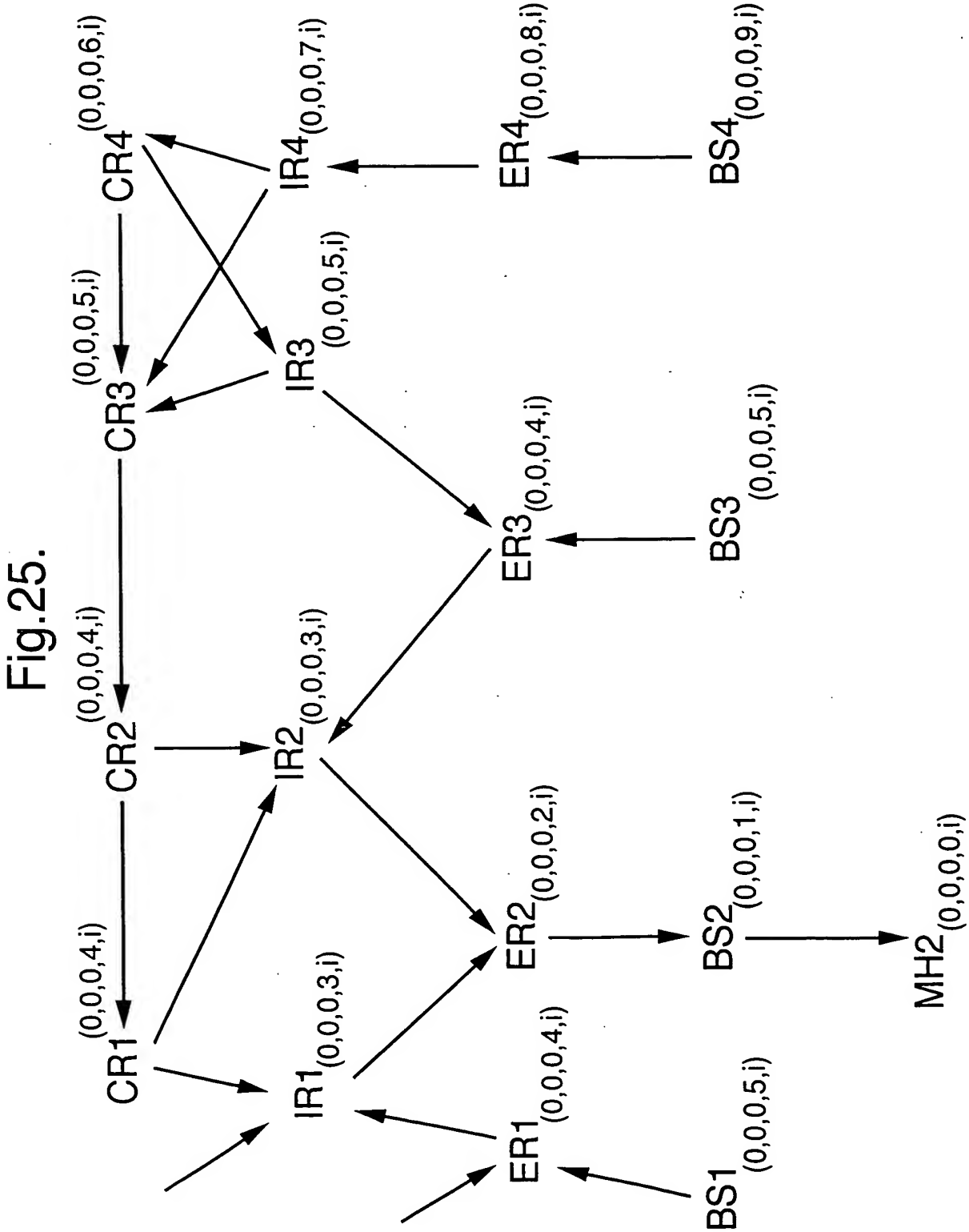

CR4 (0,0,0,6,i)
CR3 (0,0,0,5,i)
CR2 (0,0,0,4,i)
CR1 (0,0,0,4,i)
IR4 (0,0,0,7,i)
IR3 (0,0,0,5,i)
IR2 (0,0,0,3,i)
IR1 (0,0,0,3,i)
ER4 (0,0,0,8,i)
ER3 (0,0,0,4,i)
ER2 (0,0,0,2,i)
ER1 (0,0,0,4,i)
BS4 (0,0,0,9,i)
BS3 (0,0,0,5,i)
BS2 (0,0,0,1,i)
BS1 (0,0,0,5,i)
MH2 (0,0,0,0,i)

Fig.26.

Host IP Address (Or Prefix)	Own Height	Neighbour I.D.	Neighbour Height	Link I.D.	Link State
IP1	Hi (IP1)	w	H Niw (IP1)	L1	u
		x	H Nix (IP1)	L2	D
		y	H Niy (IP1)	L3	D
		z	H Niz (IP1)	L4	—
IP2	Hi (IP2)	w	H Niw (IP2)	L1	D
		x	H Nix (IP2)	L2	u
		y	H Niy (IP2)	L3	u
		z	H Niz (IP2)	L4	—
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•

Fig.27.

Host IP Address (Or Prefix)	Link ID
IP1	L2
IP2	L1
•	•
•	•
•	•